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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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22428	7590	08/07/2007		
FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			EXAMINER TORRES, JUAN A	
			ART UNIT 2611	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/891,235

Applicant(s)

HOSOMI, TAKAHIRO

Examiner

Juan A. Torres

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5, 7, 8, 14-19, 23 and 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5, 7, 8, 14-19, 23 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/04/2007 has been entered.

Response to Arguments

In this Office action new grounds of rejections are presented for all the pending claims, the Examiner hereafter responds to the Applicant's Arguments to further advance the prosecution of the case.

Applicant's arguments filed on 06/04/2007 have been fully considered but they are not persuasive.

The Applicant contends, "With respect to the rejection of claims 25-35 based in part on the teachings of Cobb, and whereby the features of claims 25-35 have been included in each of the presently pending independent claims, the Office Action asserts that column 3, lines 17-28 of Cobb teaches that when the transmission band width is varied, a bit number of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current bit number. In reply, column 3, lines 17-28 of Cobb describes that in order to gain efficiency on a link at the expense of bandwidth is to use a lower-rate code, such as a rate 1/3 code instead

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of a rate $\frac{1}{2}$ code. The rate $\frac{1}{3}$ code signifies that 1 bit of "real" data is output for every 2 bits of error correction data, while the rate $\frac{1}{2}$ code signifies that 1 bit of "real" data is output for every 1 bit of error correction data. It is clear that this portion of Cobb does not teach or suggest changing a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code. In other words, when the error correction rate is changed in the system of Cobb, the data output per unit period also changes, whereby this does not occur in the presently claimed invention" (emphasis in original).

The Examiner disagrees and asserts, that, the only reference in the Applicant's specification to this limitation is in page 18 lines 2-10 that states (for reference this is paragraph [0065] of the PGPUB) "FIG. 6 is an illustration showing a relationship between the error correction code and the data rate. As shown in FIG. 6, by increasing and decreasing bit number of the error correction code (ratio of error correction code) without varying the data amount per unit period, the data rate can be increased and decreased and whereby can vary the band width. By this, it can be expected to achieve not only optimization of the frequency band width for fading environment but also lowering of the bit error rate by increasing of the error correction code" (emphasis added).

In Cobb the reference used by the Examiner in the previous rejection states (see column 3 lines 17-28) " At present, the most commonly used error correcting codes are

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convolutional codes, typically running at rate $\frac{1}{2}$, wherein two coded symbols are transmitted for every one information symbol, thus **doubling the transmission rate and hence the occupied bandwidth**. One way to gain efficiency at the expense of bandwidth is to use even lower-rate codes, such as rate $\frac{1}{3}$ codes. Another common technique is to concatenate two codes. This most often takes the form of concatenating a convolutional code with a block code, such as a Reed-Solomon code. These two types of codes have good synergy, and significant power gains can be realized with relatively little additional band-spreading" (emphasis added).

It is clear that both references disclose the same idea: using error correction code by increasing [or decreasing] the bit number of the error correction code (this is called the code rate in the standard literature), if the data rate is increased [decreased] then the bandwidth is also increased [decreased], then the amount of data per unit period (the "effective data") doesn't change (is constant).

In the example disclosed by Cobb, if the code rate change from 1 to $\frac{1}{2}$, the transmission rate has to be double and the bandwidth also is doubled, so the amount of data per unit period doesn't change (emphasis added). The amount of data doesn't change because the data rate is double; it is a consequence of doubling the data rate (emphasis added).

In the other hand, if the code rate change from 1 to $\frac{1}{2}$ and the data rate doesn't change, then the amount of data per unit period will be reduce to half (emphasis added).

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For these reasons and the reasons indicated in the previous Office action the rejection of claims 5, 7, 8, 14-19, 23 and 24 are maintained.

Specification

The modifications to the specification were received on 06/04/2007. These modifications are accepted by the Examiner.

In view of the amendment filed on 06/04/2007, the Examiner withdraws Specification objections of the previous Office action.

Claim Rejections - 35 USC § 112

The modifications to the claims were received on 06/04/2007. These modifications are accepted by the Examiner.

In view of the amendment filed on 06/04/2007, the Examiner withdraws claims rejections under 35 USC § 112 second paragraph to claims 25-35 of the previous Office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 7, 8, 14-19 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaura (US 5504776 A) in view of Cobb (US 6606357 B1).

Regarding claim 5, Yamaura discloses a spread spectrum communication system comprising a receiving unit configured to receive a communication quality of a

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communication channel between an equipment and a counterpart equipment (figure 14 block 115 column 12 lines 8-30 and 60-65); and a control unit configured to control transmission bandwidth and a transmission power of a counterpart equipment depending upon the communication quality (figure 14 column 12 lines 8-19 and 60-65), where when the communication quality is not degraded below a predetermined level and the transmission power is not minimum, the transmission power is lowered (column 12 lines 60-65 and column 14 lines 41-47). Yamaura doesn't disclose that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code. Cobb discloses that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code (column 3 lines 17-28). Yamaura and Cobb teachings are analogous art because they are from the same field of endeavor of Digital communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate in the communication system disclosed by Yamaura the code rate variation disclosed by Cobb. The suggestion/motivation for doing so would have been to gain efficiency of the system (column 3 lines 17-28).

Regarding claim 7, Yamaura discloses a spread spectrum communication system comprising a receiving unit configured to receive a communication quality of a communication channel between an equipment and a counterpart equipment (figure 14 block 115 column 12 lines 8-30 and 60-65); and a control unit configured to control a transmission bandwidth and a transmission power of a counterpart equipment depending upon the communication quality (figure 14 column 12 lines 8-19 and 60-65), where when the communication quality is not degraded below a predetermined level and the transmission power is minimum, and when a vacant band is present in a narrower band than a currently used frequency band, the frequency band is varied to narrower band (figure 10 block s16 column 9 lines 31-47). Yamaura doesn't disclose that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code. Cobb discloses that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code (column 3 lines 17-28). Yamaura and Cobb teachings are analogous art because they are from the same field of endeavor of Digital communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate in the communication

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system disclosed by Yamaura the code rate variation disclosed by Cobb. The suggestion/motivation for doing so would have been to gain efficiency of the system (column 3 lines 17-28).

Regarding claim 8, Yamaura discloses a spread spectrum communication system comprising a receiving unit configured to receive a communication quality of a communication channel between an equipment and a counterpart equipment (figure 14 block 115 column 12 lines 8-30 and 60-65); and a control unit configured to control a transmission bandwidth and a transmission power of a counterpart equipment depending upon the communication quality (figure 14 column 12 lines 8-19 and 60-65), where the communication quality is classified into three levels depending upon degree, when the communication quality is in medium level, the control means maintains current frequency band and transmission power (figure 10 block s17 column 9 lines 31-40), and where the control unit varies the transmission band width in preference to varying the transmission power (column 12 lines 43-49 and 60-65, see response to arguments above). Yamaura doesn't disclose that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code. Cobb discloses that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while

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maintaining a same amount of data output per unit period by the error correction code (column 3 lines 17-28). Yamaura and Cobb teachings are analogous art because they are from the same field of endeavor of Digital communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate in the communication system disclosed by Yamaura the code rate variation disclosed by Cobb. The suggestion/motivation for doing so would have been to gain efficiency of the system (column 3 lines 17-28).

Regarding claim 14, Yamaura discloses a spread spectrum communication method comprising receiving, by an equipment engaged in communications with a counterpart equipment, a communication quality of a communication channel used for the communications between the equipment and the counterpart equipment (figure 14 block 115 column 12 lines 8-30 and 60-65); and controlling a transmission bandwidth and a transmission power of a counterpart equipment depending upon the communication quality (figures 9 and 10 column 9 lines 11-64), where when the communication quality is degraded below a predetermined level, the control step varies a transmission band to a wider frequency band when a vacant band is present in a wider band than a currently used frequency band (figure 10 block s14 column 12 lines 8-19 and 60-65), and where the control unit varies the transmission band width in preference to varying the transmission power (column 12 lines 43-49 and 60-65, see response to arguments above). Yamaura doesn't disclose that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart

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equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code. Cobb discloses that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code (column 3 lines 17-28). Yamaura and Cobb teachings are analogous art because they are from the same field of endeavor of Digital communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate in the communication system disclosed by Yamaura the code rate variation disclosed by Cobb. The suggestion/motivation for doing so would have been to gain efficiency of the system (column 3 lines 17-28).

Regarding claim 15, Yamaura discloses a spread spectrum communication method comprising receiving, by an equipment engaged in communications with a counterpart equipment, a communication quality of a communication channel used for the communications between the equipment and the counterpart equipment (figure 14 block 115 column 12 lines 8-30 and 60-65); and controlling a transmission bandwidth and a transmission power of a counterpart equipment depending upon the communication quality (figures 9 and 10 column 9 lines 11-64), where when the communication quality is degraded below a predetermined level, the control step increases a transmission power when a vacant band is not present in a wider band than a currently used frequency band (column 8 lines 56-67 figures 8A to 8C. The effect of

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increasing the power is equivalent, under the doctrine of equivalents to the effect of increasing the bandwidth (column 8 lines 56-67 figures 8A to 8C) increasing the bandwidth to increase the quality (figure 10 block s14 column 9 lines 11-30) and when no bandwidth is available the system will use the transmission power to meet the quality requirements (column 12 lines 44-49), and where the control unit varies the transmission band width in preference to varying the transmission power (column 12 lines 43-49 and 60-65, see response to arguments above). Yamaura doesn't disclose that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code. Cobb discloses that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code (column 3 lines 17-28).

Yamaura and Cobb teachings are analogous art because they are from the same field of endeavor of Digital communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate in the communication system disclosed by Yamaura the code rate variation disclosed by Cobb. The suggestion/motivation for doing so would have been to gain efficiency of the system (column 3 lines 17-28).

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Regarding claim 16, Yamaura discloses a spread spectrum communication method comprising receiving, by an equipment engaged in communications with a counterpart equipment, a communication quality of a communication channel used for the communications between the equipment and the counterpart equipment (figure 14 block 115 column 12 lines 8-30 and 60-65); and controlling a transmission bandwidth and a transmission power of a counterpart equipment depending upon the communication quality (figures 9 and 10 column 9 lines 11-64), where when the communication quality is not degraded below a predetermined level and the transmission power is not minimum, the transmission power is lowered (column 12 lines 60-65 and column 14 lines 41-47). Yamaura doesn't disclose that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code. Cobb discloses that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code (column 3 lines 17-28). Yamaura and Cobb teachings are analogous art because they are from the same field of endeavor of Digital communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate in the communication system disclosed by

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Yamaura the code rate variation disclosed by Cobb. The suggestion/motivation for doing so would have been to gain efficiency of the system (column 3 lines 17-28).

Regarding claim 17, Yamaura discloses a spread spectrum communication method comprising receiving, by an equipment engaged in communications with a counterpart equipment, a communication quality of a communication channel used for the communications between the equipment and the counterpart equipment (figure 14 block 115 column 12 lines 8-30 and 60-65); and controlling a transmission bandwidth and a transmission power of a counterpart equipment depending upon the communication quality (figures 9 and 10 column 9 lines 11-64), where when the communication quality is not degraded below a predetermined level and the transmission power is minimum, and when a vacant band is not present in a narrower band than a currently used frequency band, the current frequency band and transmission power are maintained (figure 10 block s17 column 9 lines 31-40), and where the control unit varies the transmission band width in preference to varying the transmission power (column 12 lines 43-49 and 60-65, see response to arguments above). Yamaura doesn't disclose that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code. Cobb discloses that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart

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equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code (column 3 lines 17-28). Yamaura and Cobb teachings are analogous art because they are from the same field of endeavor of Digital communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate in the communication system disclosed by Yamaura the code rate variation disclosed by Cobb. The suggestion/motivation for doing so would have been to gain efficiency of the system (column 3 lines 17-28).

Regarding claim 18, Yamaura discloses a spread spectrum communication method comprising receiving, by an equipment engaged in communications with a counterpart equipment, a communication quality of a communication channel used for the communications between the equipment and the counterpart equipment (figure 14 block 115 column 12 lines 8-30 and 60-65); and controlling a transmission bandwidth and a transmission power of a counterpart equipment depending upon the communication quality (figures 9 and 10 column 9 lines 11-64), where when the communication quality is not degraded below a predetermined level and the transmission power is minimum, and when a vacant band is present in a narrower band than a currently used frequency band, the frequency band is varied to narrower band (figure 10 block s16 column 9 lines 31-47). Yamaura doesn't disclose that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while

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maintaining a same amount of data output per unit period by the error correction code. Cobb discloses that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code (column 3 lines 17-28). Yamaura and Cobb teachings are analogous art because they are from the same field of endeavor of Digital communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate in the communication system disclosed by Yamaura the code rate variation disclosed by Cobb. The suggestion/motivation for doing so would have been to gain efficiency of the system (column 3 lines 17-28).

Regarding claim 19, Yamaura discloses a spread spectrum communication method comprising receiving, by an equipment engaged in communications with a counterpart equipment, a communication quality of a communication channel used for the communications between the equipment and the counterpart equipment (figure 14 block 115 column 12 lines 8-30 and 60-65); and controlling a transmission bandwidth and a transmission power of a counterpart equipment depending upon the communication quality (figures 9 and 10 column 9 lines 11-64), where the communication quality is classified into three levels depending upon degree, when the communication quality is in medium level, the control step maintains current frequency band and transmission power (figure 10 block s17 column 9 lines 31-40), and where the control unit varies the transmission band width in preference to varying the transmission

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power (column 12 lines 43-49 and 60-65, see response to arguments above). Yamaura doesn't disclose that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code. Cobb discloses that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code (column 3 lines 17-28).

Yamaura and Cobb teachings are analogous art because they are from the same field of endeavor of Digital communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate in the communication system disclosed by Yamaura the code rate variation disclosed by Cobb. The suggestion/motivation for doing so would have been to gain efficiency of the system (column 3 lines 17-28).

Regarding claim 23, Yamaura discloses a spread spectrum communication system comprising a receiving unit configured to receive a communication quality of a communication channel between an equipment and a counterpart equipment (figure 14 block 115 column 12 lines 8-30 and 60-65); and a control unit configured to control a transmission bandwidth and a transmission power of a counterpart equipment depending upon the communication quality (figure 14 column 12 lines 8-19 and 60-65),

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where when the communication quality is degraded below a predetermined level, the control unit varies the transmission band width in preference to varying the transmission power (column 12 lines 44-49). Yamaura doesn't disclose that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code. Cobb discloses that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code (column 3 lines 17-28). Yamaura and Cobb teachings are analogous art because they are from the same field of endeavor of Digital communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate in the communication system disclosed by Yamaura the code rate variation disclosed by Cobb. The suggestion/motivation for doing so would have been to gain efficiency of the system (column 3 lines 17-28).

Regarding claim 24, Yamaura discloses a spread spectrum communication method comprising receiving, by an equipment engaged in communications with a counterpart equipment, a communication quality of a communication channel used for the communications between the equipment and the counterpart equipment (figure 14 block 115 column 12 lines 8-30 and 60-65); and controlling a transmission bandwidth

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and a transmission power of a counterpart equipment depending upon the communication quality (figures 9 and 10 column 9 lines 11-64), where when the communication quality is degraded below a predetermined level, the control step varies the transmission band width in preference to varying the transmission power (column 12 lines 44-49). Yamaura doesn't disclose that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code. Cobb discloses that when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code (column 3 lines 17-28). Yamaura and Cobb teachings are analogous art because they are from the same field of endeavor of Digital communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate in the communication system disclosed by Yamaura the code rate variation disclosed by Cobb. The suggestion/motivation for doing so would have been to gain efficiency of the system (column 3 lines 17-28).

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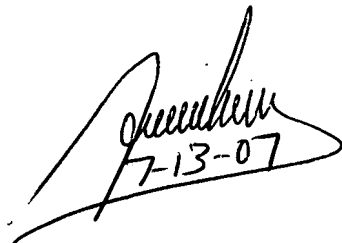
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A. Torres whose telephone number is 571-272-3119. The examiner can normally be reached on 8-6 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Juan Alberto Torres
07-13-2007



Handwritten signature of Juan Alberto Torres, dated 7-13-07.